

ABSTRACT OF THE DISCLOSURE

- 30 A method for automatic local path planning for a virtual endoscope comprises the steps  
of defining a sub volume around a current endoscope position in a lumen; performing a  
region growing inside the lumen, starting from the current endoscope position;  
calculating and clustering the intersection of the region with the faces of a cube  
circumscribing the sub volume; calculating approximated centerline paths from the  
35 current endoscope position to the center of each cluster formed in the preceding step;  
comparing each of the centerline paths with a current path exhibited by the endoscope;  
and selecting an optimal centerline path based on the comparison.